DOCUMENT RESUME

ED 233 135 CE 036 408

AUTHOR	Bennett, [illegible]; Wakeford, Richard
TITLE	Selecting Students for Training in Health Care. A Practical Guide to Improving Selection Procedures. WHO Offset Publication No. 74.
INSTITUTION	World Health Organization, Geneva (Switzerland).
REPORT NO	ISBN-92-4-170074-2
PUB DATE	83
NOTE	43p.
AVAILABLE FROM	WHO Publications Centre USA, 49 Sheridan Avenue, Albany, NY 12210; and the United Nations Bookshop, New York, NY 10017.
PUB TYPE	Guides - Non-Classroom Use (055)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Admission (School); *Admission Criteria; *Allied Health Occupations Education; Feedback; Guidelines; *Health Personnel; Higher Education; *Medical Education; Postsecondary Education; Student Recruitment
IDENTIFIERS	Monitoring

ABSTRACT

This guide is intended to help those responsible for choosing health care trainees to develop and improve their selection procedures. Special reference is given to health workers in maternal and child health. Chapter 1 deals with health care policy implications for selection of trainees, the different functions of selection and conflicts that might affect selection mechanisms. Suggestions are offered in the next chapter to translate selection policies into action. Study of the situation, political factors, public service regulations, health manpower policies, and development of a strategy are considered. Chapter 3 examines the types of information needed for making selection decisions, discusses the methods for obtaining it, and considers the strengths and weaknesses of using such information in identifying suitable candidates for training. Recommendations are made in chapter 4 for improving the use of selection methods, including examination results, standardized tests of academic achievement, intelligence tests, interviews, observations, as well as recommendations and references. The final chapter describes a feedback system to monitor selection. Six case studies are included throughout the guide to describe how different countries have attempted to solve selection problems. (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED233135

SELECTING STUDENTS FOR TRAINING IN HEALTH CARE

A Practical Guide to Improving Selection Procedures

MICK BENNETT
Senior Lecturer,
WHO Regional Teacher Training Centre
for the Western Pacific,
Centre for Medical Education,
University of New South Wales,
Sydney, Australia

RICHARD WAKEFORD
Senior Research Associate,
Office of the Regius Professor of Physic,
School of Clinical Medicine,
University of Cambridge, England

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

M Harriague

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

WORLD HEALTH ORGANIZATION
GENEVA
1983

CE 036408

WHO offset publications are intended to make generally available material that for economic, technical, or other reasons cannot be included in WHO's regular publications programme and would otherwise receive only limited distribution. They are usually reproduced by photo-offset from typescript, rather than by letterpress, and do not necessarily receive such detailed editorial revision as other WHO publications.

EDS2122

ISBN 92 4 170074 2

© World Health Organization 1983

Publications of the World Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. For rights of reproduction or translation of WHO publications, in part or *in toto*, application should be made to the Office of Publications, World Health Organization, Geneva, Switzerland. The World Health Organization welcomes such applications.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

Authors alone are responsible for the views expressed in this publication.

PRINTED IN SWITZERLAND

83/5675 — DPS — 5500

CONTENTS

	Page
Acknowledgements	4
Why this guide?	5
1. Selection and health care policy	6
The implications of selection	6
Different functions of selection	6
Conflicting priorities	7
Summary	7
Case Study 1: Burma	8
2. From policies to action	9
Studying your situation	9
Political factors	9
Public service regulations	10
Health manpower policies	11
Developing a strategy	11
Summary	14
Case Study 2: Philippines	15
3. General approaches to selection	16
Academic ability	16
Randomized selection	17
Case Study 3: Netherlands	18
Experience and nonacademic personal qualities	19
Summary	21
Case Study 4: Thailand	22
4. Improving the use of selection methods	23
Examination results	23
Standardized tests of academic achievement	24
Intelligence tests	24
Interviews	24
Observations	27
Recommendations and references	28
Summary	30
Case Study 5: Australia	31
5. Monitoring the selection system	32
Summary	34
Case Study 6: Mozambique	35
Conclusions	36
References	37

ACKNOWLEDGEMENTS

This guide was produced as part of a project on the selection of health workers with special reference to maternal and child health. The authors are grateful to the members of two working groups - the first held in Geneva, Switzerland, in December 1980, the second in Maputo, Mozambique, in December 1981 - who provided many insights and ideas that were invaluable in planning this publication. Thanks are also due to the United Nations Fund for Population Activities, which funded the preparatory work.

The authors owe a particular debt of gratitude to the late Dr Fred Katz, Chief Scientist, Educational Evaluation, World Health Organization, Geneva. Really, the book is his.

WHY THIS GUIDE?

Before health care workers can be trained, they have to be selected for training. Therefore all health workers have been through at least one selection procedure. Selection has always been a necessary part of training and thus of the health manpower development process. So, in a sense, it is the first step in the delivery of health care.

However, decisions on selection are made in many different ways and most selection procedures have been criticized as being ineffective. Yet there is virtually no practical help available to those responsible for selection who wish to improve their procedures.

Selection problems can take many forms. Poor selection can aggravate costly drop-out rates during training; it can result in trained personnel who are unwilling to work in needy or deprived areas; and it can produce difficulties for teachers in the form of unsuitable or uninterested students.

We have written this guide to try to assist those who have such problems and who believe that their selection systems can be improved. Specifically, we suggest that:

- Selection procedures should be developed which suit and support a country's overall health care policies.

- Decisions about whom to select should be based on information about applicants which is relevant to their potential performance as health workers.

In order to achieve these aims, methods currently used for selection may need to be analysed critically - particularly if they place major emphasis on academic achievement. We shall argue that a variety of information about applicants' personal qualities should contribute to selection decisions, and that careful planning can permit this. Finally, we suggest that selection systems need to be subjected to continuous review in order to monitor and sustain improvements.

We have organized the guide into five chapters so as to provide information and practical advice in all the areas concerned. In addition, we have included six case studies, which describe how a number of different countries have attempted to solve selection problems. The chapters deal respectively with the following subjects:

- Selection and health care policy
- From policies to action
- General approaches to selection
- Improving the use of selection methods
- Monitoring the selection system.

We hope that this guide will help those responsible for choosing health care trainees to develop and improve their selection procedures. However, it must be remembered that selection is only a part of the training process. Improved selection cannot make up for a bad curriculum, for example. The improvement of selection procedures on its own will not solve all your training problems. However, in conjunction with an appropriate training programme, improved selection procedures will benefit students, training institutions, and the quality of health care.

1. SELECTION AND HEALTH CARE POLICY

The implications of selection

The definition of selection, in this context, as a mechanism for deciding who will be accepted for training as a health worker might suggest that the process is relatively simple and straightforward. After all, who is interested in selection? It is obviously important to those who wish to become health workers - particularly if they are rejected. Those responsible for training health workers are also interested in selection - they want to have good students.

But is selection important enough to be of interest or concern to health planners and policy-makers and to health service administrators? Should communities who receive health care be interested in selection? We shall argue strongly that selection is important to all these people and that careful thought has to be given to selection in the early stages of planning health care programmes.

Effective health care delivery requires:

- the formulation of national health policies;
- the translation of these policies into programmes to achieve desired objectives; and
- the implementation of these programmes through concerted action.

It is at the third stage - implementation - that selection decisions are actually made, but selection is also important at the broad policy level. For example, a country may have decided on policies to:

- increase health service coverage to 80% of the rural area within 5 years;
- minimize existing ethnic or tribal disadvantages;
- emphasize integrated rural development programmes; and
- strengthen local government structures to increase decision-making in peripheral areas.

Each of these policies may have implications for selection. For instance, decisions will have to be made as to:

- whether certain ethnic or tribal groups should be given priority, and how;
- the extent to which communities will contribute to selection decisions; and
- whether health workers' training is seen as an avenue for employing school-leavers with a view to their recruitment into the system or mainly as utilizing existing traditional health workers in the community.

Different functions of selection

Selection has a number of different functions. Most people think of only one - that of identifying suitable people for training - but there are others. These can be divided into two categories: those concerned with policy, and those concerned with the training programme itself.

Examples of policy functions of selection are:

- Providing a means of promoting social and/or ethnic equalization - for instance, by quota arrangements.

- Providing a method for involving a variety of people in the health care process: this is particularly important where policies call for greater community involvement and participation.

- Providing a means of achieving health manpower projections by limiting the numbers selected to health service requirements.

Selection as a means of supporting health care policies is illustrated in Case Study 1: Burma, which appears at the end of this chapter.

Examples of selection functions related to the actual training programme are:

- Telling intending applicants something about the training programme: what is emphasized in selection will reflect what is important in the training. Selection procedures often provide individuals with their first experience of the health system, making lasting impressions on them.
- Encouraging a diversity of individuals to apply for training, thereby creating a more stimulating learning environment.
- Promoting curriculum review - perhaps one of the most important functions of selection. When dissatisfaction is expressed with the quality of students or graduates and methods of improving selection are discussed, it is inevitable that discussions will also have to take place about the training programme itself.

Conflicting priorities

Thus, many individuals are affected by and concerned with the selection process. However, people have different expectations of selection, because they have different priorities. For example, health planners may want selection requirements to be sufficiently flexible to allow manpower projections to be met, while teachers want to find students who are capable of undertaking the course. Because of these different priorities, the same selection mechanism is unlikely to be ideal for all those involved.

This is why no single selection strategy or method has been developed which is totally satisfactory. Decisions about priorities and selection methods are not right or wrong, but represent judgements resulting from a series of "trade-offs" in relation to the system as a whole.

Summary

We have argued that:

- Selection is concerned with policy aspects of health service development as well as with training.
- Selection mechanisms should be considered at an early stage in the planning or reviewing of health services to ensure that they are broadly consistent with health policies.
- Selection mechanisms are often expected to satisfy conflicting demands: they may therefore need to represent carefully considered compromises.

CASE STUDY 1: BURMA

How Can Selection Support Health Care Policies?

As a result of a country health programming (CHP) exercise in 1975-76, the Government of Burma identified 6 major health projects. One, the Primary Health Care and Basic Health Services Project, was given the highest priority. The aim of the project was to provide, within a 5-year period, a community-based primary health care service to 50% of the rural population. The strategy chosen was to use volunteer community health workers (CHWs): after a short period of training they would work in the villages.

Selection procedures were developed that supported the policies of the project in the following ways:

- By ensuring geographical coverage - the CHWs had to come from the villages designated in the plan.
- By ensuring community involvement - village councils were involved in the selection of the CHWs and in their administrative supervision after training.
- By planning flexible selection requirements, which were considered necessary for the projected number of CHWs to be trained (5400 over 5 years). Selection requirements placed a minimal emphasis on previous education. The major attributes sought were basic literacy, permanent village residence, acceptability to the village, and willingness to provide service on a voluntary basis for 3 years.

In this way, selection emphasized those factors which supported the introduction of a community-based rural primary health care programme: it attached little importance to the educational background of the trainees.

As a result, CHWs were selected who varied widely in age and education. In the first 3 years of the project, 90% of the targeted numbers had been trained and were operational. The subsequent attrition rate was very low. The Burma project demonstrates the use of imaginative selection requirements together with the involvement of local government authorities: this contributed significantly to the implementation of a priority health care project.

For additional details concerning the case study write directly to:

Primary Health Care and Basic Health Services Project
Ministry of Health
Rangoon
Burma.

2. FROM POLICIES TO ACTION

Once it has been made clear which policy or policies selection is to support, the next stage is to translate policy into action about selection. This action must be pertinent to the achievement of policy aims. Your particular situation must first be studied carefully with a view to developing a broad selection strategy.

Studying your situation

When a person is sick, a health worker must do a number of things before he or she can make a clinical diagnosis. A physical examination must be performed, a case history taken, and the social and cultural background of the patient considered. It is only after a diagnosis is made that medication can be prescribed.

Somewhat surprisingly, when thinking about selection, many people focus straight away on the analogy of "medication". They want information on a particular selection measure, such as a test, an interview technique, or a way of using reference reports. Yet the problems of the selection system first have to be properly diagnosed before "treatment" can be given and the system improved; a situational analysis has to be carried out. Information for this is provided by an analysis of the broad context in which the selection system exists. This includes political factors, public service requirements, and health manpower policy requirements. These vary from country to country and have a major bearing on the choice of appropriate selection strategies.

Political factors

Countries have different political systems and it is important to take these into account, since they may well have an influence on selection. For example, some political systems require that trainees for health care work receive party endorsement. Others have policies which give preference to the development of disadvantaged areas or particular ethnic or tribal groups. In other countries, particularly in Europe, citizens have a constitutional right to enter a university training programme if they have the minimum entry qualifications - no further selection is allowed. Again, some political systems emphasize the independence of training institutions which can use any form of selection they choose. However, in these cases the training institutions are usually still under some pressure from both the local community and the central government to demonstrate that their selection methods are "fair" - that is, they should offer equal opportunities, and selection criteria should be made known.

Any selection strategy which is to be developed must fit into the overall political system within which it has to operate. Table 1 summarizes some examples of political factors influencing selection. Any of these factors which relate to your situation should be taken into account when you design your selection strategy.

TABLE 1. EXAMPLES OF POLITICAL FACTORS AFFECTING THE DEVELOPMENT OF SELECTION STRATEGIES

Constitutional rights
Party membership/endorsement required for entry to training institution
Emphasis on selection arrangements being clear and explicit - "fairness"
Priority to disadvantaged areas or groups

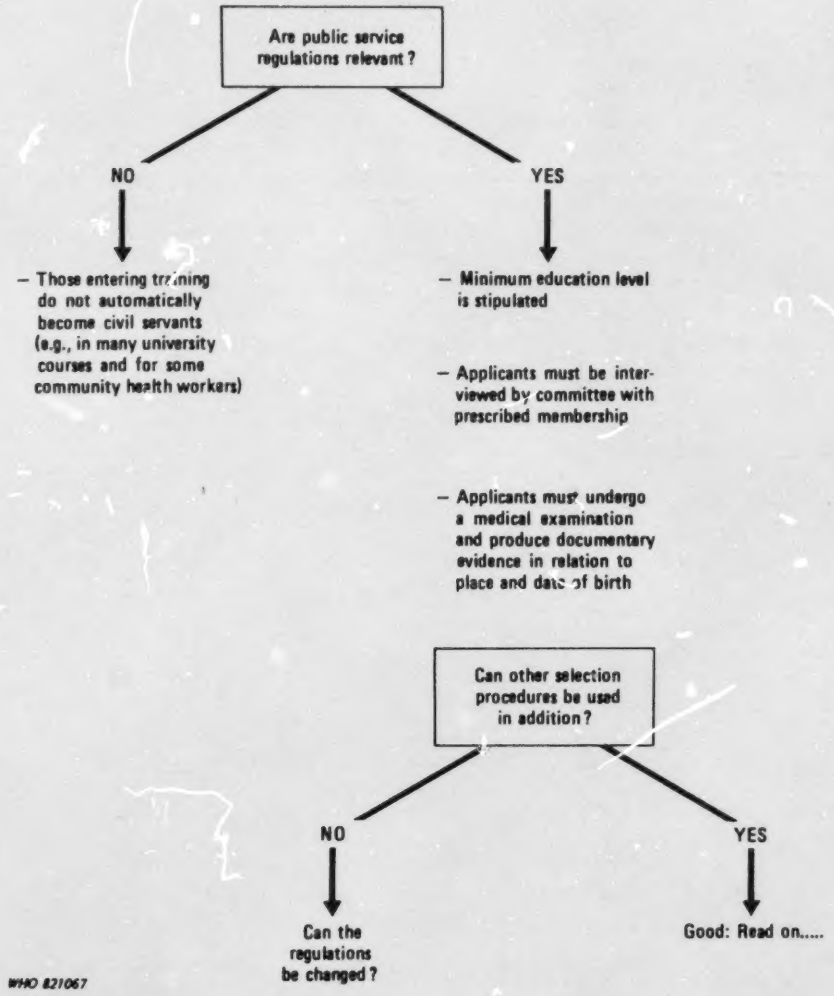
Public service regulations

Most health workers are state employees and there are normally general policies and rules laid down for the recruitment of any public servant. These rules may be administered by civil or public service commissions, and their purpose is again to demonstrate "fairness" and to ensure that there is some degree of uniformity across the public service. The role of a public service commission is also to prevent corruption or bias in recruitment and selection.

Public service regulations may specify the minimum educational level required for training for each category of health worker. They may also indicate that particular bodies should be represented on interview panels. They may require documentary proof of age and a medical examination.

Sometimes these public service requirements leave very little scope for developing selection strategies because they specify particular selection methods. In such cases, one can try to ensure that the selection methods are at least practised as efficiently as possible (suggestions on how to do this are given later). Alternatively, one can try to change the regulations (see Fig. 1).

FIG. 1. HOW PUBLIC SERVICE REQUIREMENTS MAY AFFECT THE DEVELOPMENT OF SELECTION STRATEGIES


Are public service regulations relevant?
NO
YES
– Those entering training do not automatically become civil servants (e.g., in many university courses and for some community health workers)
– Minimum education level is stipulated
– Applicants must be interviewed by committee with prescribed membership
– Applicants must undergo a medical examination and produce documentary evidence in relation to place and date of birth
Can other selection procedures be used in addition?
NO
YES
Can the regulations be changed?
Good: Read on.....
WHO 821067

Fortunately, in most situations there is still considerable flexibility, which allows for the development of good selection strategies within public service regulations.

Health manpower policies

Health manpower policies will naturally have an important bearing on the development of selection strategies. After all, the main purpose of these strategies is to contribute to the effective implementation of health manpower policy.

However, there will again be considerable variation from country to country. In some countries there are no health manpower policies - or if there are, they have little relevance because training is the responsibility of the education sector rather than the health sector. In these situations the main concern of those involved in selection will be that applicants entering training institutions are "trainable". There will unfortunately tend to be less concern about whether they will make good health workers.

But many countries now have well-developed health policies. They have made projections as to the number, type, and level of health workers to be produced. They have specified the kind of health service they plan to provide and whether a priority concern is to strengthen the degree of community involvement in making decisions about health care. It is within the context of such health manpower policies that selection strategies can make their greatest contribution: this is shown in the case study from Burma presented in the previous chapter.

Developing a strategy

A selection strategy is an approach to selection which helps us to implement selection policies. It should attempt to focus selection decisions on applicants' characteristics that are most relevant to their later function as health workers.

Some selection strategies concentrate almost exclusively on school results as the basis for making selection decisions. Others use school results as a minimum requirement and attach more importance to other information. In order to assess whether a strategy is appropriate or not, it is useful to start by looking at the overall abilities required in a health worker. Some of the most important attributes are shown in Fig. 2.

An appropriate selection strategy in this case would focus on:

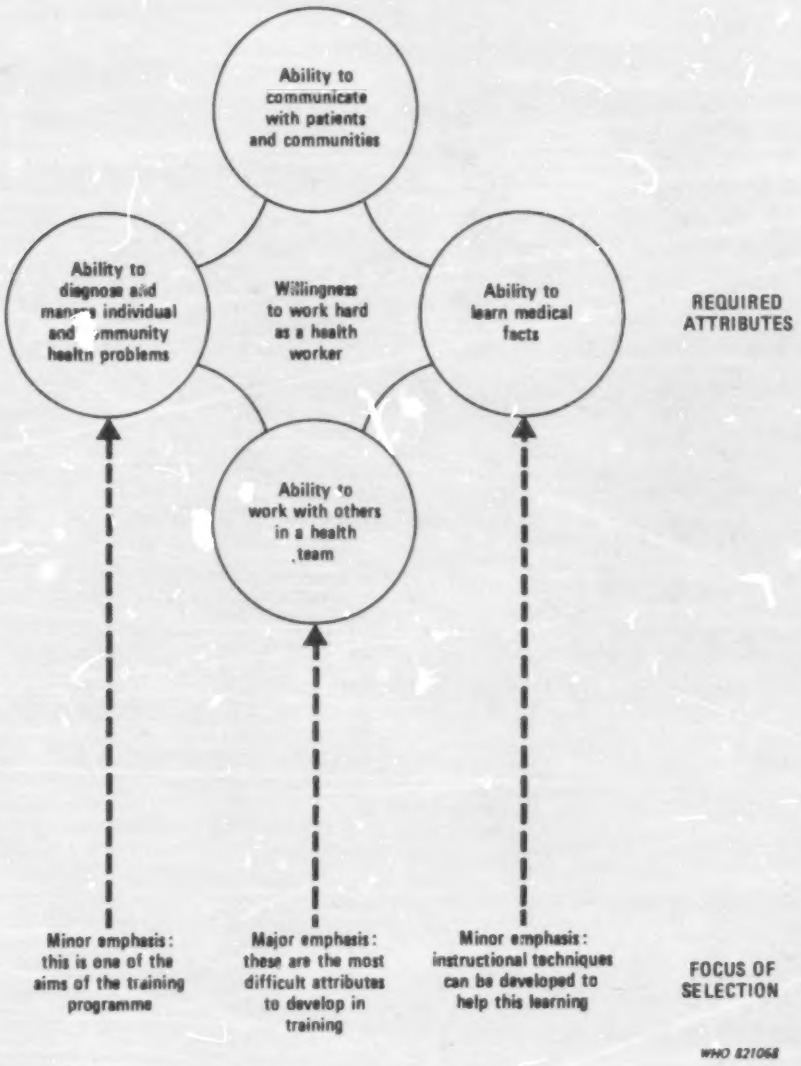
- obtaining information relating to the ability to communicate with patients and communities;
- willingness to work hard as a health worker; and
- ability to work with others in a health team.

The selection strategy would emphasize the importance of these abilities for two reasons. First, these are personal qualities, the basis of which already exists by the age at which people apply to become health workers. Secondly, these attributes are more difficult to develop in a training programme than, for example, the acquiring of knowledge.

Less emphasis would be given to the ability to absorb medical knowledge. This is because knowledge is easier to convey: a variety of instructional techniques is available which will allow most people to acquire adequate knowledge given sufficient time.

Minor emphasis would also be given to the abilities required to diagnose and manage individual and community health problems. These abilities comprise a number of skills which can be learned and practised during a training programme.

FIG. 2. EXAMPLE OF ATTRIBUTES REQUIRED IN A HEALTH WORKER


Ability to communicate with patients and communities
Ability to diagnose and manage individual and community health problems
Willingness to work hard as a health worker
Ability to learn medical facts
REQUIRED ATTRIBUTES
Ability to work with others in a health team
Minor emphasis: this is one of the aims of the training programme
Major emphasis: these are the most difficult attributes to develop in training
Minor emphasis: instructional techniques can be developed to help this learning
FOCUS OF SELECTION
WHO 821068

While it may be quite easy to reach agreement on the desired emphases of selection, it is often more difficult to find and use selection measures which reflect these emphases. One obvious source of difficulty is that information on applicants' abilities to communicate and cooperate with others or their willingness to work hard, for example, is not easily available. It is much easier to obtain information on academic performance. It is thus tempting to use the information on academic performance - which is available - even though this information reflects abilities that are not regarded as particularly important for health worker performance.

There are a number of disadvantages in placing great weight on academic attainment. We have already suggested that, apart from identifying suitable applicants for training, selection contributes to health policy and to the training programme in other ways. Table 2 shows some of the difficulties which occur when applicants are selected primarily because of academic attainment.

TABLE 2. HOW MEASURES OF ACADEMIC ATTAINMENT RELATE TO THE POSSIBLE FUNCTIONS OF SELECTION

Functions of selection	Comments on the use of measures of academic achievement
(1) Policy	
Promoting social and/or ethnic equalization	Academic measures may well hinder equalization.
Meeting health care targets	Increasing academic requirements may be the easiest way of limiting the numbers entering training institutions. Such requirements may relate more to professional and institutional status rather than health needs.
Involving different groups in the health care process	Not relevant. (However, these different groups can provide information which is not otherwise easily available - e.g., acceptability to the community, ability to work with others.)
(2) Educational	
Identifying suitable applicants for training	Academic measures can predict to some extent future academic performance: they do not indicate other qualities required in a health worker. There is a need to experiment with other methods to provide different information (e.g., interviews, teachers' reports).
Informing applicants about the training programme and the type of work	Emphasis on nonacademic abilities can indicate what is valued in the training course. If the ability to pass examinations is emphasized in selection, then passing examinations may be seen by applicants as the most important factor in being a good health worker.
Encouraging a diversity of applicants	Many older applicants have valuable abilities but often cannot enter training because of lack of formal education. Flexibility of entry requirements allows these applicants to train.
Stimulating curriculum review	Curriculum review is often stimulated by people being concerned that students do not possess the personal qualities desired in a health worker. Reviewing selection methods which might identify these qualities also stimulates questioning about the emphases of the curriculum.

If there are problems in placing too great an emphasis on academic measures, how can other abilities be taken into account? One practical way of doing this is to apply the idea of identifying applicants who are "at risk".

An example of the "at risk" concept

Suppose you are selecting scientists to go on a gruelling expedition to the South Pole. You set minimum standards for scientific knowledge about the natural history of the area and so on.

One applicant demonstrates excellent scientific knowledge. However, he is 55 years old, smokes, takes no regular exercise and is overweight.

Would you select him for the expedition?

Almost certainly not - however good his scientific knowledge. He would run the risk of having a heart attack and that's the last thing the expedition would want at the South Pole.

An applicant may fulfil basic academic entry requirements - or greatly surpass them. However, other indicators may show him to be unsuitable; for example, he may be unable to communicate effectively. Excellent examination results probably do not compensate for being unable to communicate effectively (and a number of methods are available for obtaining this information, some of which will be described later). We might therefore reject this applicant.

Information should be obtained in a variety of ways: this can help us to focus on abilities which are agreed to be important. Selection decisions should place major emphasis on these abilities.

A selection procedure that places emphasis on community acceptability is described in Case Study 2: Philippines at the end of this chapter.

Summary

We have suggested in this chapter that in order to translate policies into actions:

- the situation in which selection is to operate must first be carefully studied - particularly in relation to political system, public service, and health manpower requirements;
- the principal abilities required in a trainee (and health worker) must be agreed on: the emphases in selection should be on these abilities;
- a variety of methods must be used to obtain information on these abilities; and
- applicants who are regarded as being "at risk" because they possess some unfavourable characteristic must not be selected simply because they do well in another area - particularly in examinations.

CASE STUDY 2: PHILIPPINES

How Can Students Be Selected Who Will Serve Their Community?

The University of the Philippines has taken an imaginative step towards providing health manpower for rural areas by setting up the Institute of Health Sciences at Tacloban. This institute offers a 9-year "ladder" curriculum. A trainee entering at the bottom of the ladder undertakes a rural health worker's course involving 3 months' training. The health worker then returns to his or her community for a period of service there. After a satisfactory period of service, and provided the community continues to endorse the health worker, there is the opportunity to return to the institute for further training, as a community nurse. This pattern can be repeated until the individual has obtained the degree of Doctor of Medicine.

There are two aspects of particular significance in selection:

- The community selects the student (subject to each applicant fulfilling the basic entry qualifications of the institute).

- There is a contract between the institute and the community. The local community, through its committees, nominates and endorses the candidate for each level of training. If in its opinion, he or she provides poor service as a health worker, the nomination is withdrawn and no further training is given by the programme.

The need for continuing endorsement ensures that those trained continue to serve the community. At the same time, the community trainee has the opportunity to continue to develop professionally - provided that the community is adequately served. Coverage of priority areas is ensured by allocating training places to areas currently underserved and with the greatest health care needs.

An interesting aspect of this project is that the initiative for its development came from a university medical school seeking ways to increase the relevance of its training programmes. The qualifications awarded to successful trainees come from the University of the Philippines and it was necessary to introduce both flexible academic entry requirements and additional selection criteria related to community acceptability.

The project has been operating for almost 10 years and has now become a model for similar projects elsewhere.

For additional details concerning the case study write directly to:

The Institute of Health Sciences
Tacloban
Leyte
Philippines.

3. GENERAL APPROACHES TO SELECTION

Many people concerned with selection seek to overcome problems by concentrating on the methods used in selection. We hope that it is now clear that for any selection method to be used effectively, it must contribute to an overall selection strategy which is helping to promote health service policy. The information used for making selection decisions should not be chosen just because it is readily available: measures should be used to provide information that indicates whether or not applicants are likely to become good health workers.

Generally speaking, the information available about applicants falls into two categories:

- information about academic ability; and
- information about experience and nonacademic personal qualities.

We shall now examine each of these types of information and discuss the methods which can be used for obtaining it. We shall then consider the strengths and weaknesses of using such information in identifying suitable candidates for training as health workers.

Academic ability

Traditionally, the most common assessment used in the selection of students for training as health workers has been evidence of academic ability. Here, information from school, college, or national authorities is used as the basis for making selection decisions. The measures used include:

- school examination results;
- results of performance in national examinations;
- grades received in training institutions attended after school; and
- reports of school principals and teachers.

In addition to such measures, specialized tests may be used to provide data to help the selectors. For example, specialized aptitude tests have been developed and used to aid in the selection of students who are likely to be successful in a particular course or study. (This is the purpose of the Medical College Admissions Test - MCAT - in the United States of America.) It is also possible to administer standardized tests of intelligence or educational attainment. The latter are seen as particularly useful when there are doubts about the validity of local examination results or when such examinations have not been taken.

There are a number of reasons why emphasis has been placed on measures of academic ability.

- First, those responsible for selection want students who will be "trainable" - i.e., who will be successful in the course of instruction. Consequently it is assumed that students who have done well in previous learning will do well in a training course as a health worker.
- Secondly, applicants can be selected who have already studied relevant subjects, such as biology or chemistry. This allows those involved in designing a curriculum to make assumptions about the background of students entering the course: students are required to have "subject prerequisites".
- Thirdly, the use of measures of academic ability is seen by many selectors as "fair", in the sense that applicants are aware of the selection criteria. They know that they must attain a certain level in, say, high-school examinations in order to be accepted for training.

- Fourthly, results are provided as grades or marks. These look attractively precise and are assumed to represent true differences in ability between candidates.

- Finally, perhaps the greatest attraction of using measures of academic ability is that they are almost always readily available.

Because such a strong emphasis is usually placed on measures of academic ability, we should examine each of the reasons for their use to see whether such an emphasis is justified.

Trainability. It is fair to say that past academic performance can predict to some degree future academic performance: however, the relationship diminishes as students progress through a course. Even specially designed tests (including the MCAT) predict performance only in the early years of medical training, and that to a very limited extent (1). Considerable financial and manpower resources have been expended in developing such tests, yet it has been found difficult to extend the prediction of students' academic performance beyond the early years of training. Little if any progress has been made in predicting actual clinical performance either during or after training.

Subject prerequisites. It has sometimes been shown that having subject prerequisites can reduce the failure rate of students in certain subjects during the early years of training (2). However, this possible benefit greatly limits the range of people who can apply to be trained. In addition, it has been found that many students who have had difficulty in the early part of a training course because of the lack of prerequisites actually do well in the later stages (3): they can make excellent health workers. Consequently, it is worth considering whether the advantages to course designers of subject prerequisites are outweighed by the exclusion of otherwise excellent candidates.

Fairness. While the use of measures of academic ability is in one sense "fair", it can also be "unfair". For example, in many countries schools in rural areas are less well equipped and less well staffed than schools in urban areas. This results in students with similar abilities performing quite differently in examinations: students from rural schools are at a disadvantage.

There is also another reason for caution in the use of academic ability in this regard: that is the increased likelihood that students may apply for a training course in health care simply because they have achieved a mark or a grade in an examination which they know will gain them entry. It is unsatisfactory when a selection system results in people choosing to work in health care simply because they have done well at school, when they have no other motivation.

Differences in ability. If selection is based only on measures of academic ability, this can result in a student with a mark of (say) 71% being accepted for training, and another with a mark of 69% being excluded. In fact, examinations cannot measure differences in ability with such precision (see, for example, reference 4). There are too many factors which affect the mark awarded to a student - for example, the type of questions asked, how the candidate was feeling on the day of the examination, who the examiners were, and whether an examiner was tired when marking one paper but not tired when marking another. All these factors can influence marks by far more than 2%!

Randomized selection

Selection procedures based on measures of academic performance are frequently unfair to disadvantaged individuals or groups: such measures do not reflect their true ability. To combat this, some countries have introduced an element of randomness into their selection process - see Case Study 3: Netherlands, on the next page.

CASE STUDY 3: NETHERLANDS

Can Selection Be Random?

In Europe, selection procedures are based largely on academic performance: however, recourse has recently been had to a selection system which is at first sight rather surprising - random selection, or the "lottery system". While it is also used on an experimental basis elsewhere, in the Netherlands the system is now established. It was made official in 1972, when the Minister of Education was authorized to fix the number of students who could be accepted for certain studies (previously no limit was set). The selection method instituted by the law operated initially on the basis of a partial random selection process: candidates who had obtained an average mark of at least 7.5 out of 10 in their secondary school leaving examinations were automatically admitted to university, while those who had obtained lower marks were selected by lot.

In 1975 the provisions of the law came up for revision. The Government then proposed to replace the partially random system by a random selection applied to all candidates, whatever the results obtained at the end of their secondary studies. The proposal was not accepted as it stood by parliament, which finally adopted a system of weighted random selection. In this, a candidate with an average mark of 8.5, for example, has 3 times as many chances of being accepted as a candidate with an average of 6.5.

For additional details concerning the case study write directly to:

The Medical School
Rijksuniversiteit Limburg
Maastricht
Netherlands.

The arguments put forward in favour of completely random selection are of some interest. It was argued that the statistical correlation between examination results obtained at the end of the secondary course and those obtained at university was limited: while there is a very clear positive correlation with the results of examinations taken early in the period of university studies, especially in the science subjects, the predictive value of school results diminishes considerably during the concluding phase of higher studies. It was also pointed out that there is a close relationship between marks in school-leaving examinations and social background. A lottery system was thus proposed: this should allow a far larger number of young people of humble origin to have access to higher studies than would a selection method based on the marks obtained at the end of the secondary course. Random selection was therefore proposed not so much for its intrinsic merits, but from disillusionment with other possible methods that did not predict performance well and were also socially unjust.

The weighted system of random selection, combining pure chance and consideration of school performance, was ultimately adopted in the Netherlands. Here, the lottery serves to mitigate the lack of equity that may result from applying the meritocratic criterion of secondary school leaving examination marks.

The above observations may sound almost as though we think that measures of academic ability should not be used for selecting students for training. This is not the intention. Rather we hope that those responsible for selection will accept that there are limitations to how much emphasis should be given to such measures. Certainly, extreme caution should be exercised in placing total reliance on measures of academic ability, particularly if selectors wish to develop a selection strategy which supports health care policies, rather than simply basing decisions on convenient and easily available data.

In the next chapter we make some suggestions as to how measures of academic ability can be used to contribute to effective selection decisions. But first let us examine the use of information about experience and nonacademic personal qualities.

Experience and nonacademic personal qualities

Human beings differ in many ways other than in academic ability. Such differences may be reflected by interest and motivation, willingness to take responsibility, concern for people, adaptability to challenging situations, application to work, and moral and philosophical outlook. These characteristics will clearly have relevance to a person's performance as a health worker - especially if they are maintained and supported throughout training and in a work environment. Unfortunately, they are difficult to assess: accurate information about nonacademic personal qualities has to be sought assiduously, because it is rarely readily available.

There are, however, three types of measurement which have been used in assessing experience and personal qualities: the interview, personal observations and recommendations, and standardized psychological tests.

The interview. After measures of academic attainment, the interview is the most commonly used method of obtaining information for making selection decisions.

However, what is described as an "interview" may vary enormously from one situation to another. For instance:

- the number of interviewers may vary from one to a dozen or more;
- in some interviews, agreement has been reached beforehand on the type of information to be sought from the candidate, while in others interviewers are expected to ask whatever questions they choose;
- some interviews require interviewers to rate applicants on a numbers of specified characteristics; others simply ask for a judgement as to whether a candidate is acceptable or not.

In addition, those conducting the interview may be teachers, health professionals, public service representatives, community leaders, or a mixture of all of these.

A number of other difficulties are associated with interviews. There is no one ideal format for an interview. Many research studies have shown that interviewers often disagree among themselves on the judgements they make, and frequently their judgements are not accurate (5). Unfortunately, because interviewers are usually in a position of authority they are rarely asked to justify their decisions or to examine their accuracy.

However, information about personal qualities obtained from interviews has been shown to be valuable in contributing to selection decisions (6), provided that considerable thought has been put into the format of the interview and sufficient time has been spent in the preparation of the interviewers. The next chapter makes some suggestions for increasing the value of the interview in assessing experience and nonacademic personal qualities. A case study from Australia (Case Study 5, appearing at the end of chapter 4) demonstrates how interviewers can be trained to conduct selection interviews more successfully.

Personal observations and recommendations. Individuals who apply to become health workers will be acquainted with a number of different people. Those who have knowledge of the personal qualities and life experiences of applicants will include teachers, parents, fellow students, and fellow members of the community. The usual problem is not that this information is nonexistent, but that the persons asked for their opinion may be reluctant to damage the selection chances of applicants whom they know.

Nevertheless, information from personal observation and recommendations can be used in selection. For example:

- Teachers can be asked to rate applicants on particular personal qualities compared to others in the same year, rather than being asked to give a general reference.
- Opportunities can be arranged for those wishing to become health workers to become involved in the work of health centres or hospitals, during (for example) school holidays. Assessments may be made by health staff during this period of placement. (Such a scheme is described in Case Study 4: Thailand at the end of this chapter.)
- Applicants (perhaps from one school) can be asked to undertake a number of group exercises: these might be debating a health-related topic, delivering a short talk on the requirements of a health worker, or discussing a specific health problem. During these activities, observations and ratings of predetermined personal qualities (e.g., ability to communicate) can be made. In addition, applicants can be asked to rank each other according to certain qualities. Such an approach has been used with considerable success in many countries to assist in the selection of civil servants, police, and members of the armed forces.

These are just three examples of ways in which, with thought and planning, valuable information can be obtained on important characteristics of applicants. Further advice and suggestions in relation to the use of observations and recommendations are offered later.

Psychological measures. In Western countries particularly, many attempts have been made to measure the qualities desirable in health workers by the use of standardized psychological tests. Such tests include measures of:

- personality;
- attitudes; and
- aptitude.

However, to develop a test of personality, for example, requires considerable knowledge about theories of personality, an ability to use complex measurement procedures, and a lot of time and experience in trying out and refining the test. Even where such expertise and resources have been available, personality tests have not generally been found to be effective in aiding selection for recruitment into the health professions (7). There are, moreover, ethical problems. Consequently, we advise those involved in selection against using personality tests, particularly if this involves applying a test developed in one culture to a quite different one.

Similar difficulties exist with standardized measures of attitudes. This is because it is both hard to define exactly what an attitude is and difficult to measure it. There are also problems in ensuring that attitude tests are eliciting honest responses, and scores on attitude tests are not sufficiently accurate to justify making decisions about the future of individuals.

The general exception to what we have said above is the use of tests of manual dexterity. Some health workers, particularly in dental work, require highly developed manual skills. Tests of manual dexterity (8) have been found to be useful in measuring aptitude for the kind of detailed manual work required of dental technicians. However, such tests still necessitate expertise and the expenditure of resources in their development.

Because of the practical difficulties involved in developing psychological tests of nonacademic personal qualities and because these tests have been found to be of limited utility, we shall offer no further advice on the subject here. Those interested in using such measures should ask for specific advice from people in universities or departments of education who have been trained in educational and psychological measurement.

Summary

In this chapter we have suggested that:

- although measures of academic ability are readily available and convenient to use, there are strong arguments for using additional kinds of information in selection decisions;
- valuable information on applicants' personal qualities and life experiences can be obtained from interviews, recommendations, and observations - provided careful thought is given to these measures;
- psychological tests of personality and attitudes are expensive to develop and have been found to be of little value in the selection of health workers; however, tests of specific aptitude such as manual dexterity can be useful.

CASE STUDY 4: THAILAND

How Can Information on the Personal Qualities of Applicants Be Obtained?

The Ministry of Public Health in Thailand has been concerned to find ways of selecting and training health care students who will have the skills and personal qualities needed to work in rural areas, particularly in district hospitals.

One experimental programme that has been set up is a project carried out jointly with the Medical Faculty of Chulalongkorn University in Bangkok and known as the Medical Education for Students in Rural Areas Project (MESRAP). This project, involving a curriculum which runs in parallel with the normal undergraduate medical curriculum, has two distinct features:

- Students are selected into the project with less emphasis on academic attainment than students entering the main-stream. Instead, greater weight is put on the assessment of applicants' personal qualities during high-school vacation placements in rural hospitals.

- MESRAP students and main-stream students complete similar preclinical training. But the clinical component of the course for MESRAP students is undertaken in rural hospitals rather than in the large Chulalongkorn University teaching hospital.

The MESRAP project operates in 9 provinces in north-east Thailand. Each province is allocated a number of places at Chulalongkorn University. Applicants from high schools in each province spend part of their vacation during the last 2 years at high school attached to district hospitals. During this time they are given a variety of tasks, some of which are not directly health-related (e.g., helping with the cleaning) and some of which are health-related (e.g., joining mobile teams which tour villages, undertaking health assessments and conducting health education programmes).

For a total of 8 weeks, applicants can thus be observed by health staff in a variety of work situations. The health staff then identify the applicants in each district hospital who they believe have the personal qualities important in a health worker (e.g., ability to work as a member of a team, willingness to work hard, capacity to maintain a positive attitude towards villagers). A number of names are then put forward by the hospitals for selection by the University. Further selection is based on high-school results and performance in the Chulalongkorn University entrance examination.

Consequently, initial screening is concerned with personal qualities, although final selection is based on academic ability. This is the reverse order to that generally used in selection, where academic ability is the first criterion and personal qualities are only considered later, if at all.

As might be expected in a pilot project of this kind, some difficulties have emerged. Not all hospitals have been enthusiastic about receiving 20 or more students during the school vacations, and there have been some problems in reaching agreement as to what qualities are to be assessed. No doubt the selection system will need modification and refinement. However, the MESRAP approach offers an interesting alternative to traditional selection methods for admission to medical school. The approach also indicates a commitment by the authorities in terms of time and money to identify applicants who are likely to possess the personal qualities needed to make effective rural medical practitioners.

For additional details concerning the case study write directly to:

Medical Education for Students in Rural Areas Project (MESRAP)
Medical Faculty
Chulalongkorn University
Bangkok
Thailand.

4. IMPROVING THE USE OF SELECTION METHODS

In the previous chapter we suggested caution in the exclusive use of measures of academic ability. We indicated that interviews, observations, and recommendations could provide useful additional information on personal qualities and contribute to selection decisions. We shall now make recommendations on improving the use of specific selection methods, including:

- examination results;
- standardized tests of academic achievement;
- intelligence tests;
- interviews;
- observations; and
- recommendations and references.

Examination results

Many countries have national examinations which provide a basic qualification for entry into the public service or into training institutions. Considerable time and effort are usually put into the setting and marking of these examinations to ensure that the results are reasonably reliable.

However, an examination can only provide an estimate of a person's academic ability at a particular time. Examinations cannot assess everything a person knows about a subject; they can only sample a relatively small amount. Consequently, examination results should always be interpreted and used with caution.

Another important point has already been mentioned briefly: health workers need to acquire knowledge, skills, and attitudes during training that differ from those learned at school. An examination result obtained at the end of school does not predict an ability to learn all the things necessary to become a good health worker. Moreover, to a large extent it reflects the quality of the school, not just that of the student!

For these reasons, examination results should only be interpreted as giving an indication of the applicant's academic achievement: this might be consistently high, consistently average, consistently low or variable. Also, if information is available over a period of time, general trends (e.g., improvement) may be apparent in an applicant's performance.

However, it is unlikely that examination results will identify who will do best, second best, third best, etc., during training as a health worker. Examinations are not accurate enough to provide a rank order, but are more useful in allowing a broad categorization into "good bets", "reasonable bets", and "poor bets" in terms of future academic performance. That is, examination results allow the identification of applicants who may be "at risk" in terms of their trainability.

This is important, because we do not mean to imply that applicants should be selected simply because they have performed well (or achieved the best results) in examinations. Rather, we believe that examination results should be used to ensure that applicants have reached an adequate level of educational attainment, one which broadly indicates that they will be able to cope with the academic aspects of a training programme.

School examinations are not designed to predict future performance as a health worker, but to measure achievement at school. Therefore it is to be expected that they can provide only general indications of trainability.

Standardized tests of academic achievement

Standardized tests can be of two kinds:

- those which are purpose-designed to predict performance in training for the health professions (such as the MCAT); and

- those which are used to measure the level of achievement in specific areas such as vocabulary, reading comprehension, or arithmetic.

Purpose-built tests. These are expensive to develop and few countries can afford them. In addition, they have not been found to predict performance very well beyond the early years of medical school (1). Consequently, only those countries wishing to embark on an ambitious selection project should be concerned with them; further discussion about them is beyond the scope of this guide.

Standardized tests in specific areas. These have sometimes proved to be useful (9). For example, students entering a training course may be found to have difficulty in coping with the language of instruction, which may lead to a high failure rate in the first year of the course. In such situations, a standardized vocabulary test could be administered and students required to obtain a certain minimum score before being admitted.

But we also advise caution here. Standardized tests are not intended to identify good health workers, but rather to reveal those who may have difficulty with a particular academic aspect of the course. They are another way of assessing who may be educationally "at risk": selectors should pay no attention to differences in performance above a specified minimum level.

Those involved in selection who wish to develop such tests should consult technical specialists in education.

Intelligence tests

The development and use of intelligence tests have been the subject of numerous technical publications by psychologists in many different countries and cultures. Intelligence tests have an obvious attraction to those involved in selection: they are assumed to measure intellectual ability rather than present or past academic achievement. In practice, however, intelligence tests have been found to add little predictive value when combined with measures of academic achievements (10). Certainly, exaggerated claims about the possible contribution of intelligence tests in predicting health worker performance should be treated with caution. It should be remembered that intelligence test results are used mainly to identify those who will be successful in passing academic examinations; this is only one aspect of health worker performance.

However, like standardized tests of academic achievement, intelligence test results may assist in reducing failure rates in academic subjects in the early part of a training programme by establishing a minimum level of entry. They should not be used as a substitute for measures of experience and nonacademic personal qualities, since they assess completely different attributes.

Again, specialist expertise should be sought on the use of intelligence tests. We do not particularly recommend their use in the selection of health care trainees.

Interviews

Interviews are a most important selection technique: however, they vary considerably in terms of the numbers of people involved, the degree to which the interview is structured, and the qualities being assessed. For an interview to provide useful information, careful planning is necessary to ensure that all interviewers are aware of its purpose; moreover they should be properly prepared for their role.

In the planning stages it is important to decide on the focus of selection decisions - to agree on the characteristics and qualities the interview is assessing. In audition, it should be decided whether the interview is to be used to rank candidates or to indicate those who are unsuitable.

An example: selecting community nurses

Suppose that during this planning stage you have agreed that selection decisions will place emphasis on:

- interest in becoming a health worker;
- willingness to cooperate with other people; and
- ability to explain simple ideas to others.

Suppose also that the interview is to be used to identify unsuitable candidates rather than to choose the best applicants. Your next stage is to have a meeting with those who will be involved in the interview: you will explain that these are the characteristics to be assessed during the interview, and decide on ways of identifying doubtful or unsatisfactory candidates.

It is important during such a meeting that you emphasize the following points:

- Agreement should be reached on the kind of information that would allow a judgement to be made: questions should be formulated which are likely to elicit this information. That is, all the questions should focus on obtaining evidence in relation to the characteristics being assessed.
- The questions should allow the candidates to give concrete examples of their abilities and interests which indicate why they possess the characteristics being assessed. Judgements cannot be made on the basis of such vague statements as "I have always been interested in health work" or "I want to help people". Rather, the candidates should be asked to describe a past experience which demonstrates their interest in health work or helping people.
- Interviewers who decide that a candidate should not be selected should give their reasons. It is important that interviewers indicate the evidence they have used in coming to a decision.
- Interviewers should be aware that the purpose of an interview is to obtain information from the applicant, and to answer any questions that he or she might ask. Unfortunately, some interviewers frighten candidates by evincing an air of importance. If no useful information is obtained during the interview then this is the fault of the interviewer - not of the applicant.

A sample interview form which might arise from a planning meeting is shown in Fig. 3. Note that the questions are quite specific: they require information from the candidates' past experience which will provide evidence regarding the characteristics being assessed. Also, if the interviewer thinks a candidate is doubtful, he must give his reasons for coming to that conclusion.

FIG. 3. SAMPLE INTERVIEW FORM

Name of applicant _____ Name of interviewer _____

INTEREST IN BECOMING A HEALTH WORKER

1. Have you been to a hospital or health centre?
2. What does a health worker do?
3. What do you think would be the difference between a good health worker and a poor health worker?
4. What abilities and interests do you have which would make you a good health worker?
5. Can you describe a situation from your past experience in which you demonstrate these abilities or interests?

INTERVIEWER'S NOTES

Do you have doubts about this applicant's interest in becoming a health worker?
Yes ... No ...
If yes, why? .....

WILLINGNESS TO COOPERATE WITH OTHERS

6. Can you describe something you have done or achieved completely on your own?
7. Can you describe something you have done or achieved which required your working with other people?
8. Which of these situations did you enjoy more, and why?

Do you think this applicant will be willing to cooperate with other people?
Yes ... No ...
If no, why not? .....

ABILITY TO EXPLAIN SIMPLE IDEAS TO PEOPLE

9. Interviewer says to applicants: "Pretend I am a villager. Can you explain to me (either):
   - why I should eat vegetables, or
   - why breast-feeding is better than bottle-feeding, or
   - why I should wash my hands after defecating or urinating."

After the explanation, do you think the applicant will be able to explain simple ideas to other people?
Yes ... No ...
If no, why not? .....
.....
.....

We do not suggest that the sample interview form will fit all situations, but it has the following advantages:

- it requires agreement on the characteristics to be assessed in the interview;
- it obtains information from the applicant in the form of specific examples of his or her behaviour which demonstrate these characteristics; and
- it requires the interviewers to give reasons for their judgements.

The final stage in preparing for the interview is to train the interviewers, so that they make consistent judgements about an applicant. Consistency of judgement is important, because candidates' selection or rejection should not depend on one particular interviewer's ideas: it should also not be a matter of chance. An example of how such training can be carried out is given in Case Study 5: Australia at the end of this chapter. This shows that those involved in interviewing can be staff members of the training institution, representatives of professional bodies, or members of the community.

Observations

An example of how applicants can be observed over a period of time in a health care system was given in Case Study 4: Thailand at the end of the previous chapter. This procedure is not always feasible, but other opportunities can be created for applicants to be observed. The following scene provides another example of what can be done.

> Eight students from a secondary school have applied to be trained as health assistants. A staff member from the Health Assistant Training School is visiting the school and makes arrangements with the principal to spend an afternoon with the applicants. The staff member introduces herself to the applicants: she says that during the afternoon the students will be expected to be involved in a number of discussions which will be used to gain further information about their personal qualities.
>
> The students are first asked to introduce themselves individually and to say why they think they will make good health assistants. During these brief presentations, the staff member notes those students who have thought about their abilities and have concrete ideas as to why they feel that they would make good health assistants. She also notes which of the students seem to have little or no idea about what is involved in being a health worker and have apparently given their career choice little thought.
>
> Next, the staff member asks the students to imagine they are health assistants involved in a village health programme whose aim is to encourage the community to support a volunteer village health worker. In a particular village, the local council has previously opposed the idea, but has now agreed to hold a village meeting at which the health assistants can explain why it is important to have a village health worker: they can describe what such a worker would do and how it would benefit the village.
>
> The prospective health assistant students are then asked to discuss how they would plan for such a meeting.
>
> During the discussion, the staff member notes the interaction between the students and identifies those students who are willing to accept other people's views and those who are determined to have their own way, regardless of the opinions of others. She also notes the ideas students have about the way of life and priorities of village people.

Finally, the staff member asks the students to rank their fellow students in terms of (a) whether they would like to go on holiday with them, and (b) whether they would make good health assistants.

Reviewing these rankings at the end of the afternoon, she finds that three students were consistently ranked low by their fellow students in terms of their potential as health assistants. She finds that she had queried these same students in the first two exercises. On the basis of the afternoon's observations she considers that these three students are unlikely to make effective health assistants and decides that they should be rejected.

It turns out later that one of the students concerned performs very well in the national high-school examination, but he is still not accepted into the Health Assistant Training School.

This example shows how observations can be used to identify "at risk" applicants. Over a relatively short period (about 2 hours), 8 applicants have been assessed, 15 minutes having, in effect, been devoted to each applicant. Yet, because the applicants have been observed in a group, a considerable amount of information has been gathered.

With a little imagination, this kind of observational technique can be valuable in providing information to assist in selection decisions. Naturally the exercises will vary according to the type of health worker being selected, but we hope that this example has provided some ideas about what can be achieved.

Recommendations and references

There is a common difficulty in assessing the validity of testimonials. This is the tendency of referees to emphasize the good qualities and to minimize - or even to ignore - the poor qualities of applicants.

One way of reducing this bias is to ask specific questions. For example, instead of requesting a general statement about an applicant's character, you can ask the referee - the school principal, for example - the following questions:

Dear Principal,

X has applied for entry to the Health Assistant Training School. The main personal qualities sought by the School are:

- interest in becoming a health assistant,
- willingness to cooperate with other people,
- ability to explain simple ideas to others.

Please indicate how you would rate X on these personal qualities in comparison with other students in his/her year.

(1) Interest in becoming a health assistant

Very high, has shown consistent interest over a long period	Medium, seems quite interested although has also shown interest in other courses	Low, he/she applied because there was nothing else he/she could think of as a possible career

Please describe an event or situation which illustrates your rating.

.....

.....

.....

(2) Willingness to cooperate with other people

Very high, has always shown a concern to work with his/her fellows	Medium, usually follows the crowd but does not put himself/herself out to assist others	Low, tends to want to work on his/her own

Please describe an event or situation which illustrates your rating.

.....

.....

.....

(3) Ability to explain simple ideas to others

Very high, has an ability to communicate ideas in a simple and direct manner	Medium, can sometimes communicate reasonably well but also gets confused	Low, has difficulty in communicating ideas

Please describe an event or situation which illustrates your rating.

.....

.....

.....

Please return this letter as soon as possible. Your comments will, of course, be treated as confidential.

Yours sincerely,

This kind of format for a referee's report has a number of advantages. First, it requires the referee to compare the applicant with fellow students. Secondly, it asks for information about specific personal qualities. Thirdly, it asks for concrete examples which demonstrate these qualities. Such a format is more likely to generate information which can help selectors to discriminate between candidates.

Summary

In this chapter we have made a number of suggestions about improving the use of particular selection methods. We have indicated that:

- Examination results should be used for placing applicants in broad categories rather than for ranking them, and for identifying those who are likely to be educationally unsuitable.
- Standardized tests for academic achievement and intelligence can be used to reduce failure rates in the early stages of training, but results should not be overemphasized in selection and should be interpreted in relation to students' backgrounds.
- For interviews to be effective, careful planning is necessary to reach agreement on the qualities which are to be assessed. In addition, interviewers need to be trained so that their judgements are consistent.
- Situations can be arranged in which observations can provide valuable information on the personal qualities of applicants.
- Recommendations can be requested which are quite specific and refer to personal qualities important in a health worker.

CASE STUDY 5: AUSTRALIA

How Can We Train Interviewers?

Cumberland College of Health Sciences in Sydney is the major institution responsible for training nonmedical health manpower in the State of New South Wales. The College is made up of a number of schools, each of which has considerable flexibility in determining the selection requirements for entry.

The School of Occupational Therapy wanted to encourage a wide variety of students to enter the course in order to ensure that its graduates were representative of the population. As a result of this policy, two methods of entry were developed. School-leavers enter the course on the basis of high-school results, but 25% of places are reserved for students of a more mature age - i.e., over 25 years - who do not necessarily have the academic qualifications required for school-leaver entry. A strong emphasis in the selection of mature-age students is placed on information obtained from an interview.

The qualities to be assessed at the interview were agreed on by both the teaching staff of the School and a sample of occupational therapy practitioners: this followed identification of the characteristics felt to be necessary to adequate performance in the training programme and to the effective practice of occupational therapy.

The characteristics to be assessed include:

- ability to relate to others;
- self-confidence;
- ability to deal with situations of conflict; and
- motivation to become an occupational therapist.

Interview teams comprise:

- a member of the teaching staff of the School of Occupational Therapy;
- a member of a servicing school of the College; and
- a practitioner of occupational therapy.

Before the interviews are conducted, a number of simulated interviews are shown on videotape and the members of interviewing panels are asked to make a judgement in terms of the characteristics being assessed. Initially there are considerable discrepancies: interviewers are asked to give the reasons why they made a particular judgement. As a result of this exercise, discussions clarify what is meant by the particular characteristics and the kinds of information which interviewers use in making a judgement. Only when interviewers reach close agreement in their judgement are they allowed to become a member of an interviewing panel. This training programme ensures that interviewers make consistent judgements. Research studies indicate that these judgements are related to students' subsequent performance in the College and later as practising occupational therapists.

This procedure is an attempt to ensure that interviewers know what the selection requirements are: it increases the likelihood that interviewers will make similar judgements about candidates.

For additional details concerning the case study write directly to:

School of Occupational Therapy
Cumberland College of Health Sciences
Sydney, N.S.W.
Australia.

5. MONITORING THE SELECTION SYSTEM

Developing a selection system should not be seen as an occasional or "one-off" event, but rather as a continuing activity requiring constant monitoring. There are two reasons for this:

- First, the environment within which selection takes place is not static. Priorities change, both politically and in the health system; as a result, the aims of selection may also change over time. In addition, conditions such as oversupply or undersupply of applicants for training will change as policies outside the health system are implemented. The expectations and interests of applicants will not remain the same, and the characteristics of those applying to be trained will change.

- Secondly, the selection methods used need to be continually monitored to ensure that they are achieving their purpose and to see in what ways they can be improved. Any system, whether it be a total health care system, a national selection system, or an institutional training system, should develop feedback mechanisms. The information thus elicited will indicate whether there is a mismatch or discrepancy between what it was intended to achieve and what has actually been achieved.

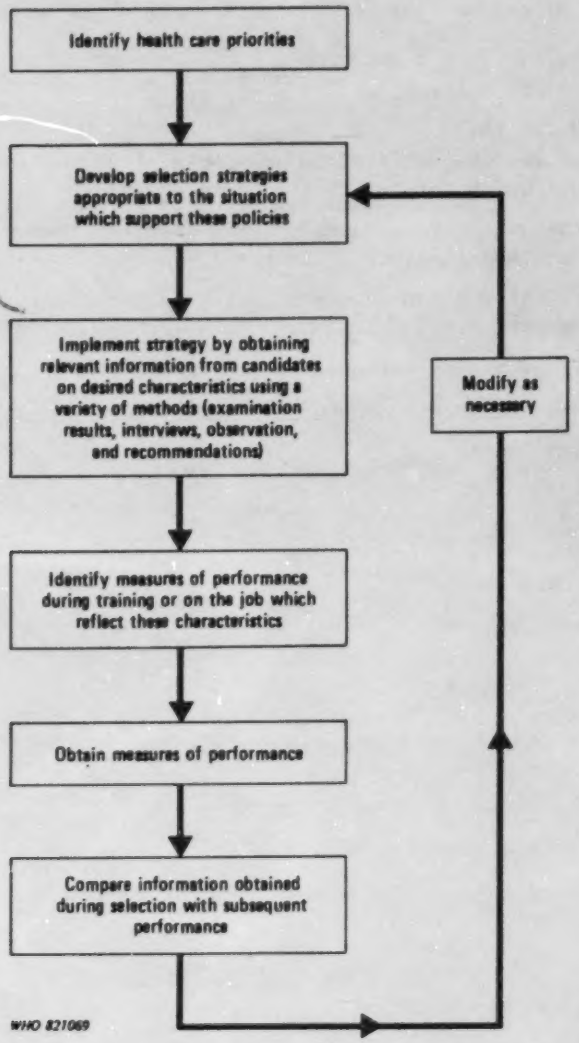
In order to monitor any selection system, there must first be clarity and agreement about the focus of selection - for example, on obtaining information about certain personal attributes. This is why selection methods need to be related to selection strategies and health policies. The next requirement is agreement on the kind of information that will indicate whether the purpose is being achieved: for example, do those selected show an ability to cooperate with fellow students during training?

Obviously for this kind of judgement to be made, appropriate information must be obtained. It is not possible to ascertain whether students show an ability to cooperate with each other if the only assessments made are of their knowledge of anatomy and physiology, say.

If, after the collection and evaluation of such information, it is apparent that the system is not selecting students with the desired characteristics, then new or modified selection procedures need to be introduced.

The requirements for such a feedback system to monitor selection are shown in Fig. 4.

FIG. 4. A FEEDBACK SYSTEM FOR SELECTION


Identify health care priorities
Develop selection strategies appropriate to the situation which support these policies
Implement strategy by obtaining relevant information from candidates on desired characteristics using a variety of methods (examination results, interviews, observation, and recommendations)
Identify measures of performance during training or on the job which reflect these characteristics
Obtain measures of performance
Compare information obtained during selection with subsequent performance
Modify as necessary
WHO 821069

One very important point should be made at this stage: selection cannot be expected to offset the shortcomings of a curriculum. Selection can support what a training programme is trying to achieve, but it cannot remedy inappropriate training. If information on personal qualities is being used for selection, then such qualities should be further developed and assessed during training. It is not realistic to select applicants on the basis of their ability to cooperate with others if, over a 3-year training course, assessments are made only of academic attainment. Where such a situation arises, you should query the relevance of the training course.

An example of the monitoring of a selection system is given in Case Study 6: Mozambique at the end of this chapter.

Summary

In order to assess whether a selection system is working, it is important to:

- clarify which characteristics of applicants are being used in making selection decisions;
- develop measures of performance during training (or, later, on the job) which reflect these characteristics;
- ascertain whether training programmes strengthen and assess these characteristics;
- compare information obtained during selection with subsequent performance;
- modify and refine selection procedures.

CASE STUDY 6: MOZAMBIQUE

Who Should Monitor the Selection System?

In Mozambique the Ministry of Health has centralized the training of all nonmedical health workers. The selection of applicants for training is the responsibility of a separate Selection Unit within the Ministry. This Selection Unit has developed a variety of measures to assist in obtaining information on applicants' academic ability, their reasons for becoming health workers, and their teachers' opinions as to their suitability for training. As a result, selection is made on the basis of a total score using a variety of information about candidates.

However, the Ministry of Health has recognized that the selection system must be subjected to continuous review. Consequently, members of the Selection Unit are responsible for monitoring selection. To fulfil this task, they must keep in contact with instructors in order to obtain measures of performance in the Training Institute. These measures include the rate of failure in academic examinations, the proportion of "drop-outs" attributable to inappropriate choice of career, and staff assessments of personal qualities.

Comparison of information used during selection and that obtained from the Training Institute enables information to be sought, weightings of selection scores to be adjusted, and overall selection strategies to be reviewed.

While not all countries may wish to set up a selection unit within the ministry of health, it is useful to give a specific individual or group of individuals the responsibility for monitoring the selection system. This is because for most people involved with selection, monitoring is only one of many responsibilities. As a result, it is easy for them to be critical of selection procedures but they have no time to assist in improving them.

The Mozambique example shows the value of having a mechanism whereby selection systems are not simply criticized but are also monitored and improved.

For additional details concerning the case study write directly to:

The Selection Unit
Ministry of Health
Maputo
Mozambique.

CONCLUSIONS

The selection of students to be trained for health care work is an important factor in the attainment of WHO's goal of health for all by the year 2000, for the following reasons:

- it is the first step in the training of health workers;
- it helps to implement health care policies; and
- it contributes to the quality of health care delivery.

Improving selection requires that:

- the goals of health care be clarified and accepted;
- the desired characteristics of health workers be well defined;
- existing systems of selection and training be analysed critically to identify shortcomings;
- new approaches to selection be explored, particularly those which place greater emphasis on nonacademic personal qualities; and
- the selection and training process be continually monitored in line with health service policies and priorities.

We hope that this book has provided some insights into the role of selection, that it has given practical help in overcoming selection problems, and that it has provided assistance in ensuring that selection contributes to the development of effective health manpower. We should be glad to have your comments and to know if you would like further information and advice.

REFERENCES

1. Gough, H. C. How to select medical students. Medical teacher, 1: 17-20 (1979).

2. Linke, R. D. et al. Student selection in the Flinders curriculum. Medical journal of Australia (special supplement), 2, No. 1: 3-5 (1979).

3. Rhoads, J. M. et al. Motivation, medical school admissions and student performance. Journal of medical education, 49: 1119-1127 (1974).

4. Erdmann, J. B. et al. The medical college admission test: past, present and future. Journal of medical education, 46: 937-946 (1971).

5. Sterk, V. V. & Prywes, M. Evolution of selection methods for admission to medical school; critical evaluation of a semi-structured interview. Israel journal of medical science, 6: 126-131 (1970).

6. Murden, R. et al. Academic and personal predictors of clinical success in medical school. Journal of medical education, 53: 711-719 (1978).

7. Huxham, G. J. et al. Achievement factors and personality in a cohort of medical students. Medical education, 14: 97-104 (1980).

8. Boyd, M. A. Interpretation and use of the dental admission and aptitude tests. Journal of dental education, 44: 275-278 (1980).

9. Weinstein, E. L. Characteristics of the successful nursing student. Journal of nursing education, 19: 53-59 (1980).

10. Hobfall, S. E. & Benor, D. E. Prediction of students' clinical performance. Medical education, 15: 231-236 (1981).

QUESTIONNAIRE FOR READERS OF THIS GUIDE*

In order to monitor and improve our publications concerned with health manpower development, we should be very grateful to know what you feel about this book.

	Very helpful	Fairly helpful	Not helpful
- Selection and health care policy	☐	☐	☐
- From policies to action	☐	☐	☐
- Approaches to selection	☐	☐	☐
- Improving the use of selection methods	☐	☐	☐
- Monitoring the selection system	☐	☐	☐
- Case studies	☐	☐	☐

- Did you read this publication out of general interest ☐ or because you had specific problems with selection ☐ ?
- Are you personally involved in the actual selection of students? Yes ☐ No ☐
- Are you personally responsible for determining selection policies? Yes ☐ No ☐
- Do you plan to alter any aspect of selection as a result of this publication? Yes ☐ No ☐

If yes, in what way? For what students? .....

.....

.....

*Please make a photocopy of this questionnaire, complete it and return to:

Educational Planning and Methodology
Division of Health Manpower Development
World Health Organization
1211 Geneva 27
Switzerland.

Thank you for your help.

WHO publications may be obtained, direct or through booksellers, from:

ALGERIA: Société Nationale d'Edition et de Diffusion, 3 bd Zirout Youcef, ALGIERS

ARGENTINA: Carlos Hirsch SRL, Florida 165, Galerías Güemes, Escritorio 453/465, BUENOS AIRES

AUSTRALIA: Hunter Publications, 58A Gipps Street, COLLINGWOOD, VIC 3066 — Australian Government Publishing Service *(Mail order sales)*, P.O. Box 84, CANBERRA A.C.T. 2600; *or over the counter from* Australian Government Publishing Service Bookshops *at:* 70 Alinga Street, CANBERRA CITY A.C.T. 2600; 294 Adelaide Street, BRISBANE, Queensland 4000; 347 Swanston Street, MELBOURNE, VIC 3000; 309 Pitt Street, SYDNEY, N.S.W. 2000; Mt Newman House, 200 St. George's Terrace, PERTH, WA 6000; Industry House, 12 Pirie Street, ADELAIDE, SA 5000; 156–162 Macquarie Street, HOBART, TAS 7000 — R. Hill & Son Ltd, 608 St. Kilda Road, MELBOURNE, VIC 3004; Lawson House, 10–12 Clark Street, CROW'S NEST, NSW 2065

AUSTRIA: Gerold & Co., Graben 31, 1011 VIENNA I

BANGLADESH: The WHO Programme Coordinator, G.P.O. Box 250, DHAKA 5 — The Association of Voluntary Agencies, P.O. Box 5045, DHAKA 5

BELGIUM: Office international de Librairie, 30 avenue Marnix, 1050 BRUSSELS — *Subscriptions to World Health only:* Jean de Lannoy, 202 avenue du Roi, 1060 BRUSSELS

BRAZIL: Biblioteca Regional de Medicina OMS/OPS, Unidade de Venda de Publicações, Caixa Postal 20.381, Vila Clementino, 04023 SÃO PAULO, S.P.

BURMA: *see* India, WHO Regional Office

CANADA: Canadian Public Health Association, 1335 Carling Avenue, Suite 210, OTTAWA, Ont. K1Z 8N8. *Subscription orders, accompanied by cheque made out to the* Royal Bank of Canada, OTTAWA, Account World Health Organization, *may also be sent to the* World Health Organization, P.O. Box 1800, Postal Station B, OTTAWA, Ont. K1P 5R5

CHINA: China National Publications Import & Export Corporation, P.O. Box 88, BEIJING (PEKING)

CYPRUS: "MAM", P.O. Box 1722, NICOSIA

CZECHOSLOVAKIA: Artia, Ve Smeckach 30, 11127 PRAGUE 1

DENMARK: Munksgaard Export and Subscription Service, Nørre Søgade 35, 1370 COPENHAGEN K (Tel: +45 1 12 85 70)

ECUADOR: Libreria Cientifica S.A., P.O. Box 362, Luque 223, GUAYAQUIL

EGYPT: Osiris Office for Books and Reviews, 50 Kasr El Nil Street, CAIRO

FIJI: The WHO Programme Coordinator, P.O. Box 113, SUVA

FINLAND: Akateeminen Kirjakauppa, Keskuskatu 2, 00101 HELSINKI 10

FRANCE: Librairie Arnette, 2 rue Casimir-Delavigne, 75006 PARIS

GERMAN DEMOCRATIC REPUBLIC: Buchhaus Leipzig, Postfach 140, 701 LEIPZIG

GERMANY, FEDERAL REPUBLIC OF: Govi-Verlag GmbH, Ginnheimerstrasse 20, Postfach 5360, 6236 ESCHBORN — W. E. Saarbach, Postfach 101610, Follerstrasse 2, 5000 KÖLN 1 — Alex. Horn, Spiegelgasse 9, Postfach 3340, 6200 WIESBADEN

GHANA: Fides Enterprises, P.O. Box 1628, ACCRA

GREECE: G. C. Eleftheroudakis S.A., Librairie internationale, rue Nikis 4, ATHENS (T. 126)

HAITI: Max Bouchereau, Librairie "A la Caravelle", Boîte postale 111-B, PORT-AU-PRINCE

HONG KONG: Hong Kong Government Information Services, Beaconsfield House, 6th Floor, Queen's Road, Central, VICTORIA

HUNGARY: Kultura, P.O.B. 149, BUDAPEST 62 — Akadémiai Könyvesbolt, Váci utca 22, BUDAPEST V

ICELAND: Snaebjørn Jonsson & Co., P.O. Box 1131, Hafnarstraeti 9, REYKJAVIK

INDIA: WHO Regional Office for South-East Asia, World Health House, Indraprastha Estate, Mahatma Gandhi Road, NEW DELHI 110002 — Oxford Book & Stationery Co., Scindia House, NEW DELHI 110001; 17 Park Street, CALCUTTA 700016 *(Sub-agent)*

INDONESIA: P. T. Kalman Media Pusaka, Pusat Perdagangan Senen, Block I, 4th Floor, P.O. Box 3433/Jkt, JAKARTA

IRAQ: Ministry of Information, National House for Publishing, Distributing and Advertising, BAGHDAD

IRELAND: TDC Publishers, 12 North Frederick Street, DUBLIN 1

ISRAEL: Heiliger & Co., 3 Nathan Straus Street, JERUSALEM 94227

ITALY: Edizioni Minerva Medica, Corso Bramante 83–85, 10126 TURIN; Via Lamarmora 3, 20100 MILAN

JAPAN: Maruzen Co. Ltd, P.O. Box 5050, TOKYO International, 100–31

KUWAIT: The Kuwait Bookshops Co. Ltd, Thunayan Al-Ghanem Bldg, P.O. Box 2942, KUWAIT

LAO PEOPLE'S DEMOCRATIC REPUBLIC: The WHO Programme Coordinator, P.O. Box 343, VIENTIANE

LEBANON: The Levant Distributors Co. S.A.R.L., Box 1181, Makdassi Street, Hanna Bldg, BEIRUT

LUXEMBOURG: Librairie du Centre, 49 bd Royal, LUXEMBOURG

MALAWI: Malawi Book Service, P.O. Box 30044, Chichiti, BLANTYRE 3

MALAYSIA: The WHO Programme Coordinator, Room 1004, 10th Floor, Wisma Lim Foo Yong (formerly Fitzpatrick's Building), Jalan Raja Chulan, KUALA LUMPUR 05–10; P.O. Box 2550, KUALA LUMPUR 01–02 — Parry's Book Center, K. L. Hilton Hotel, Jln. Treacher, P.O. Box 930, KUALA LUMPUR

MEXICO: Libreria Internacional, S.A. de C.V., Av. Sonora 206, 06100-México, D.F.

MONGOLIA: *see* India, WHO Regional Office

MOROCCO: Editions La Porte, 281 avenue Mohammed V, RABAT

MOZAMBIQUE: INLD, Caixa Postal 4030, MAPUTO

NEPAL: *see* India, WHO Regional Office

NETHERLANDS: Medical Books Europe BV, Noorderwal 38, 7241 BL LOCHEM

NEW ZEALAND: Government Printing Office, Publications Section, Mulgrave Street, Private Bag, WELLINGTON 1; Walter Street, WELLINGTON; World Trade Building, Cubacade, Cuba Street, WELLINGTON. *Government Bookshops at:* Hannaford Burton Building, Rutland Street, Private Bag, AUCKLAND; 159 Hereford Street, Private Bag, CHRISTCHURCH; Alexandra Street, P.O. Box 857, HAMILTON; T & G Building, Princes Street, P.O. Box 1104, DUNEDIN — R. Hill & Son, Ltd, Ideal House, Cnr Gillies Avenue & Eden St., Newmarket, AUCKLAND 1

NIGERIA: University Bookshop Nigeria Ltd, University of Ibadan, IBADAN

NORWAY: J. G. Tanum A/S, P.O. Box 1177 Sentrum, OSLO 1

PAKISTAN: Mirza Book Agency, 65 Shahrah-E-Quaid-E-Azam, P.O. Box 729, LAHORE 3

PAPUA NEW GUINEA: The WHO Programme Coordinator, P.O. Box 646, KONEDOBU

PHILIPPINES: World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, MANILA — The Modern Book Company Inc., P.O. Box 632, 922 Rizal Avenue, MANILA 2800

POLAND: Sklednica Księgarska, ul Mazowiecka 9, 00052 WARSAW *(except periodicals)* — RWPG Ruch, ul Wronia 23, 00840 WARSAW *(periodicals only)*

PORTUGAL: Livraria Rodrigues, 186 Rua do Ouro, LISBON 2

REPUBLIC OF KOREA: The WHO Programme Coordinator, Central P.O. Box 540, SEOUL

SIERRA LEONE: Njala University College Bookshop (University of Sierra Leone), Private Mail Bag, FREETOWN

SINGAPORE: The WHO Programme Coordinator, 144 Moulmein Road, SINGAPORE 1130; Newton P.O. Box 31, SINGAPORE 9122 — Select Books (Pte) Ltd, 215 Tanglin Shopping Centre, 2/F, 19 Tanglin Road, SINGAPORE 10

SOUTH AFRICA: Van Schaik's Bookstore (Pty) Ltd, P.O. Box 724, 268 Church Street, PRETORIA 0001

SPAIN: Comercial Atheneum S.A., Consejo de Ciento 130–136, BARCELONA 15; General Moscardó 29, MADRID 20 — Libreria Díaz de Santos, Lagasca 95 y Maldonado 6, MADRID 6; Balmes 417 y 419, BARCELONA 22

SRI LANKA: *see* India, WHO Regional Office

SWEDEN: *For books:* Aktiebolaget C.E. Fritzes Kungl. Hovbokhandel, Regeringsgatan 12, 10327 STOCKHOLM. *For periodicals:* Wennergren-Williams AB, Box 30004, 104 25 STOCKHOLM

SWITZERLAND: Medizinischer Verlag Hans Huber, Länggass Strasse 76, 3012 BERN 9

THAILAND: *see* India, WHO Regional Office

TUNISIA: Société Tunisienne de Diffusion, 5 avenue de Carthage, TUNIS

TURKEY: Haset Kitapevi, 469 Istiklal Caddesi, Beyoglu, ISTANBUL

UNITED KINGDOM: H.M. Stationery Office: 49 High Holborn, LONDON WC1V 6HB; 13a Castle Street, EDINBURGH EH2 3AR; 80 Chichester Street, BELFAST BT1 4JY; Brazennose Street, MANCHESTER M60 8AS; 258 Broad Street, BIRMINGHAM B1 2HE; Southey House, Wine Street, BRISTOL BS1 2BQ. *All mail orders should be sent to:* HMSO Publications Centre, 51 Nine Elms Lane, LONDON SW8 5DR

UNITED STATES OF AMERICA: *Single and bulk copies of individual publications (not subscriptions):* WHO Publications Centre USA, 49 Sheridan Avenue, ALBANY, N.Y. 12210. *Subscriptions: Subscription orders, accompanied by check made out to the* Chemical Bank, New York, Account World Health Organization, *should be sent to the* World Health Organization, P.O. Box 5284, Church Street Station, NEW YORK, N.Y. 10249. *Correspondence concerning subscriptions should be addressed to the* World Health Organization, Distribution and Sales, 1211 GENEVA 27, Switzerland. *Publications are also available from the* United Nations Bookshop, NEW YORK, N.Y. 10017 *(retail only)*

URUGUAY: Libreria Agropecuaria S. R. L., Casilla de Correo 1755, Alzaibar 1328, MONTEVIDEO

USSR: *For readers in the USSR requiring Russian editions:* Komsomolskij prospekt 18, Medicinskaja Kniga, MOSCOW — *For readers outside the USSR requiring Russian editions:* Kuzneckij most 18, Mezhdunarodnaja Kniga, MOSCOW G-200

VENEZUELA: Libreria del Este, Apartado 60.337, CARACAS 106 — Libreria Médica Paris, Apartado 60.681, CARACAS 106

YUGOSLAVIA: Jugoslovenska Knjiga, Terazije 27/II, 11000 BELGRADE

ZAIRE: Librairie universitaire, avenue de la Paix N° 167, B.P. 1682, KINSHASA I

Special terms for developing countries are obtainable on application to the WHO Programme Coordinators or WHO Regional Offices listed above or to the World Health Organization, Distribution and Sales Service, 1211 Geneva 27, Switzerland. Orders from countries where sales agents have not yet been appointed may also be sent to the Geneva address, but must be paid for in pounds sterling, US dollars, or Swiss francs.

Price: Sw. fr. 7.– **Prices are subject to change without notice.** **C/1/83**

The selection of suitable candidates to be trained as health personnel is one of the first steps in the successful delivery of health care. Poor selection of trainees can aggravate costly drop-out rates or produce personnel who are unwilling to work in deprived areas. Up to now, virtually no practical help, in the shape of guidelines, has been available to people responsible for selection who wish to improve their procedures.

This guide has been written with a view to filling the gap. It deals with selection in the broad context of health care delivery, the translation of selection policies into action, general approaches to selection, improving the use of selection methods, and monitoring the selection system. Case studies of experience in several countries illustrate certain aspects of the selection process.

The guide will be of interest to decision-makers both at the central level — in ministries of health and ministries of education — and at intermediate levels, such as directors of schools for health personnel.